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ASTRONOMY AND AUTHORSHIP

By M. J. GELLER

A new edition of the astronomical compilation MUL.APIN follows closely upon the recent publication of two sections of the large compendium of Babylonian astronomical omens known as Enūma Anu Enlil.¹ The text of MUL.APIN likewise includes a section of astronomical omens, as well as a catalogue of stars, including the 'fixed' (*ziqpu*) stars, and information regarding the planets, heliacal risings, the path of the moon, calendrical intercalations, and a shadow table and water clock. This modern edition is clearly presented and well-translated, and includes notes on both the philology and astronomy of the text.

One feature of MUL.APIN requiring further comment is the date and location of the original compilation of the text. The authors assert that the astronomical data calculated from two lists of *ziqpu* stars in MUL.APIN indicate that the text was likely to have been composed in Nineveh in c. 1000 B.C. According to Pingree and Hunger:

There are two lists of *ziqpu* stars in MUL.APIN. The first, Va, contains the names of fourteen constellations (I iv 4–6). The texts before and after this list specify that these stars are 'in the middle of the sky opposite the breast of the observer of the sky'—i.e., that they cross his local meridian, as do all stars. What is special about these particular constellations is they passed not only 'opposite the breast of the observer' but above his head if he stood in Nineveh ($\phi = 36; 30^\circ$ N) in ca. -1000 .²

The assumption is that sections of the text date from the latest record of the astronomical observations, although the oldest surviving manuscript can only be dated to -687 .³

The dating and geographical location given for MUL.APIN are actually more controversial than the editors suggest. The dating of -1000 is posited, for example, without evaluation of the relative accuracy of their data. Can -1000 imply an error of ± 100 years or more? The authors make no attempt to clarify their conclusions.⁴ The larger question raised by the dating of MUL.APIN affects current theories regarding the canonization of Mesopotamian literature: if the canonical text of MUL.APIN can be independently dated on the basis of astronomical calculations, can this dating be relevant for the canonization of other Mesopotamian literary works? Furthermore, the process of establishing standardized text editions is vaguely associated with Cassite Babylonia, which makes the derivation of MUL.APIN from post-Tiglath-pileser Assyria

¹ H. Hunger and D. Pingree, *MUL.APIN, an astronomical compendium in Cuneiform* (Archiv für Orientforschung, Beiheft 24, 1989), and E. Reiner and D. Pingree, *Babylonian planetary omens [BPO]* (Bibliotheca Mesopotamica, II, vols. 1–2, Malibu, 1975; 1981). A text edition of further sections of Enūma Anu Enlil by C. Rochberg-Halton, *Aspects of Babylonian celestial divination: the lunar eclipse tablets of Enūma Anu Enlil* (Afo, Beiheft 22) has now appeared.

² *MUL.APIN*, 141; the crucial phrase is *ina mehret irti nāšir šamē* 'opposite the breast of the observer' (*MUL.APIN*, I iv 2). Cf. also *ibid.*, 10, and *BPO*, II, 6.

³ *ibid.* 9. As for the date of the canonical text of Enūma Anu Enlil, Reiner and Pingree state simply that the sources are from seventh-century Kuyunjik and 'the date of their composition in their present form cannot be much earlier' (*BPO*, II, 1). See also D. Pingree and C. Walker, 'A Babylonian star catalogue: BM 78161', *apud* E. Leichty *et al.*, *A scientific humanist, Studies in memory of Abraham Sachs* (Philadelphia, 1988), 313 ff., giving *ziqpu* stars, calculated by the authors as -700 , for which MUL.APIN serves as the *terminus post quem*, -1000 , for dating of the text.

⁴ cf. *MUL.APIN*, 145, in which the authors are less definitive in their conclusion, referring to data which 'firmly supports the hypothesis that MUL.APIN originated at a place (such as Nineveh) whose latitude was about 36° N'. The authors may be using the date -1000 as a round number for computation purposes, without considering the figure to be an exact dating.

(Nineveh) all the more striking.⁵ Could the Assyrians have produced an indigenous scribal tradition which was responsible for astronomical observations, and perhaps even text editions?

The dating of MUL.APIN to Nineveh — 1000 clearly needs defending. The choice of Nineveh itself raises serious doubts, as similarly demonstrated by W. G. Lambert's review of *Enūma Anu Enlil* Tablets 50–51, which questioned whether Babylonian astronomers could have been imported into Assyria during the period in question, since scanty information from an Assyrian chronicle suggests that Nineveh itself in *c.* — 1000 was overrun by Arameans.⁶ Even if Nineveh was unaffected by such disruptions, the editors' choice of that city as the locus of MUL.APIN's astronomical calculations is questionable on grounds of lack of evidence. It is conceivable, of course, that the latitude of calculation may not reflect the origins of the text itself, since the observations could be conducted from a latitude considered to be advantageous purely on astronomical grounds, with the data transmitted elsewhere. Nevertheless, some justification ought to exist for the choice of Nineveh, particularly since there is an obvious alternative site for the origins of MUL.APIN's astronomy, namely, Assur.

The libraries of the city of Assur date from the reign of Assur-reš-iši (1132–15) and Tiglath-pileser I (1114–1076 B.C.) and, being located near the 36° parallel, offer a plausible alternative to Nineveh as the source for putative Assyrian astronomical records because of the proximity of the two cities. But could Assur have supported a school of astronomy, and how would this have related to contemporary scholarship in Babylonia at the time?

There is some justification for crediting Assur scribes with an interest in astronomy. The libraries of Tiglath-pileser's reign contained copies of the astrological text *Astrolabe B*,⁷ and a commentary on another astrolabe and on *ziqpu* stars, copied by the important Assur scribe Marduk-balassu-eriš, who depended upon Babylonian scholarship.⁸ Nevertheless, the possibility that astronomical calculations were actually made and recorded (in MUL.APIN) in Assur would need to be tested against other data demonstrating Assur's role as a scribal centre. Was Assur, as Civil has suggested, merely a staging post in the process of textual transmission, copying older Babylonian texts which were later incorporated into the Assurbanipal library,⁹ or could Assur scribes have actually composed and redacted Mesopotamian literary texts, and thus actively contributed to the process of canonization?

The Assur scribe mentioned above, Marduk-balassu-eriš, copied among other texts two lengthy epics, *Angim* and *Lugale*. The longer epic, *Lugale*, is particularly revealing, since a bilingual edition of tablets 1–4, 9–12, and 14–16

⁵ M. Civil, *Sumerological studies in honor of Thorkild Jacobsen* (Assyriological Studies [AS], 20, 1976), 128, C. Rochberg-Halton, in *Language, literature, and history*, [E. Reiner Festschrift] (New Haven, 1987), 327. E. Reiner's own comments on the history of the text of *Šurpu* are worth noting, cf. *Šurpu*, AFO, Beiheft 11 (1970), 2.

⁶ W. G. Lambert, *JAOS*, 107, 1987, 94 f. Cf. J. A. Brinkman, *A political history of post-Kassite Babylonia* (Rome, 1968), 387, and A. K. Grayson, *Assyrian and Babylonian Chronicles* (Locust Valley, N.Y., 1975), 189:12.

⁷ *BPO*, II, 81 f. = *KAV* 218; Tablet 51 of *Enūma Anu Enlil* is assumed to derive from *Astrolabe B*, cf. *BPO*, II, 1 and *MUL.APIN*, 11.

⁸ H. Hunger, *Babylonische und assyrische Kolophone* [BAK], 1968, no. 43. This feature of Babylonian scholarship in Assur also appears in two tablets copied and collated by Marduk-balassu-eriš and his brother Bel-aha-iddina, which is copied from a *Vorlage* from Nippur and Babylon, 'according to a tablet (*a-na pi-i tup-pi ša-ta-ri*) which Iqiša-Ninkarrak wrote' (*KAR* 15 and 16), cf. Hunger, *BAK*, no. 44. One might even entertain the possibility that Marduk-balassu-eriš belonged to a Babylonian scribal family living in Assur. Babylonian tablets were, in any case, found in the Assur libraries, cf. O. Pedersén, *Archives and libraries in the city of Assur* (Uppsala, 1985), 31 ff., and Lambert, *JCS*, 16, 1962, 64.

⁹ AS 20, 128.

survives from Assur, with colophons giving the exact position of the tablets within the series.¹⁰ Van Dijk moreover suggests that the Assur translation of *Lugale* may have been replaced by an inferior Neo-babylonian edition, but the question as to whether there really were two independent textual traditions, originating in Assyria and Babylonia, remains open.¹¹ As for the similar problems concerning the textual tradition of *Angim*, J. S. Cooper concluded that the textual history of *Angim* moved generally from South to North, and that the Middle and Neo-Babylonian recensions were direct descendants from an Old Babylonian *Vorlage*.¹² The Middle Assyrian *Angim* text from Assur, on the other hand, not only differed considerably from the surviving old Babylonian recension, but also influenced the Neo-Assyrian recension.¹³ Both *Lugale* and *Angim* thus display the following characteristics: (1) The bilingual editions at Assur were not copies of any Old Babylonian tablets known to us; although in other of his manuscripts Marduk-balassu-erīš claims to have copied Nippur originals,¹⁴ such a statement does not appear in his extant *Lugale* or *Angim* colophons. (2) The Assur texts, although differing significantly from later Neo-Assyrian and Neo-Babylonian editions, could have influenced the shape of first-millennium recensions. (3) The single Middle Babylonian source available for *Angim*, from Nippur, suffices to demonstrate its independence of the Assur recension. The Middle Assyrian scribal tradition from Assur thus appears to have preserved distinctive series reconstructions of these bilingual epics.¹⁵

Further evidence for scribal authorship can now be adduced from one other Middle Assyrian text, namely, a bilingual prayer to Tukulti-Ninurta I, similar to *KAR* 128–9, which W. G. Lambert assumed to be composed by a scribe of the court of Tukulti-Ninurta I (1243–1207 B.C.).¹⁶ The tablet itself, BM 98496, is one of a handful of Middle Assyrian tablets excavated by R. Campbell

¹⁰ J. J. Van Dijk, *Lugal Ud Melam-bi Nergal* (Leiden, 1983), II, 42, 151, and 181.

¹¹ *ibid.*, II, 12.

¹² J. S. Cooper, *The return of Ninurta to Nippur* (Rome, 1978), 50 ff., and *idem.*, *JAOS*, 97, 1977, 508 ff.

¹³ *ibid.*, 43. Cf. B. Alster, 'The textual history of the legend of Etana', *JAOS*, 109, 1989, 81 ff., in which he points out distinctive differences between the Old Babylonian, Middle Assyrian, and Late Assyrian recensions of the epic, for which it is impossible to establish clear lines of transmission between the versions.

¹⁴ Hunger, *BAK*, no. 43.

¹⁵ Surviving copies of Middle Assyrian tablets can be defective and relatively erroneous, cf. W. G. Lambert, *AS*, 16, 284, and the present writer, *Iraq*, 42, 1980, 26. However, the presence of errors in Assur manuscripts does not discount the ability of Assur scribes to edit or reconstruct texts. This can be demonstrated from the Middle Assyrian bilingual incantation cited above (BM 130660 = *Iraq*, 42, 1980, 23 ff.) which is now known to belong to *KAR* 24 (as a non-contiguous join) from an Assur library. The Assur tablet in a significant number of lines preserves a better text tradition than that of the later duplicates, such as the fuller version of the standard Marduk-Ea dialogue (cf. *Iraq*, 42, 1980, 29, 11, 84'–85', 95'–96', 104'–107').

Nevertheless, there is no independent scribal tradition from first millennium colophons or catalogues attributing text editions to Middle Assyrian scribes, comparable to the Babylonian tradition of scribal ancestors and the attribution of Gilgamesh, Erra, and the Babylonian Theodicy to well-known Babylonian scribes.

¹⁶ Lambert, *Iraq*, 38, 1976, 87 f., tries to demonstrate from internal evidence that the prayer originates from the reign of Tukulti-Ninurta I, by drawing attention to allusions in the prayer to the Assyrian King List (the oldest surviving exemplar of which comes from Assur). Lambert concludes (*ibid.*, 86) that 'the only Assyrian king before 1000 BC known to have had a scribe capable of original Sumerian literary composition is Tukulti-Ninurta I', and that the scribe was a Babylonian scribe brought by the king to Assyria. One might, however, take the opposite view: the fact that Tukulti-Ninurta I plundered tablets from Babylonian sites, according to his own admission (*A/O*, 18, 1957–58, 44:2–11) might suggest that the Assur of his time was less likely to have a highly developed scribal tradition with indigenous expertise.

Moreover, it does not necessarily follow that hymns to Tukulti-Ninurta I must have been composed in his lifetime. The likelihood always exists that rulers were idealized in retrospect, but in the absence of colophons arguments dating a composition are difficult to prove on internal evidence alone.

Thompson, and probably brought from Assur to Nineveh during the reign of Tiglath-Pileser I.¹⁷ Amongst this small group of Middle Assyrian tablets are also found the tablets of Angim and Lugale discussed above, which were copied—according to the colophons—by Marduk-balassu-eriš.¹⁸ The present writer has compared the ductus of the Tukulti-Ninurta bilingual prayer¹⁹ with the Angim and Lugale exemplars, and it is probable that Marduk-balassu-eriš copied *all three* of these tablets, since the ductus is identical.²⁰ It could then be argued that a Tukulti-Ninurta prayer, albeit containing statements by the king himself in the first person, could have been composed in the reign of Tiglath-Pileser I, during a period when the Assur scribal schools were thriving and productive. A parallel could be found in the so-called Cruciform Monument, considered by E. Sollberger to be a Neo-Babylonian forgery, but which may also have been a pseudepigraphic historical text originating from the Old Babylonian period that attempted a more antique style appropriate to the time of Maništušu, the subject of the inscription.²¹

The counter argument is that one would expect the calculations and the text editions of MUL.APIN to have stemmed from Babylonia rather than Assyria. This point of view derives in part from later colophons and catalogues of ancient libraries, which consistently associated such scholarship with Babylonia rather than Assyria,²² while another tradition associates such texts as Lugale and Angim with the Borsippa scribe Esagil-kin-apli. This scribe's name appears in an important colophon recently discovered by I. L. Finkel in the British Museum Babylon Collection, which gives the incipits of the medical omen series SA.GIG, as well as alamdimmu, nigdimdimmu, and kataduggu,²³ and the now complete colophon assigns the original edition of the texts to Esagil-kin-apli himself, during the reign of Adad-apla-iddina (1067–46 B.C.).²⁴ Esagil-kin-apli is elsewhere credited with a large number of incantation, medical, and omen texts, in a list of more than a hundred compositions,²⁵ several of which are also cited in the opening section of a Nineveh literary catalogue:²⁶

[maš.maš-*l*]u₄ : lú.gala-ú-tu₄ : ud an^den-líl
[alam-dí]m-mu-ú : sag.iti.^rnu.til.la¹ : sa.gig.^rga¹
[ka.ta.d]u₁₁.ga : lugale ud me.lám.bi ner.gál : an.gim dí[m].[ma]

¹⁷ W. G. Lambert and A. R. Millard, *Catalogue of the Kuyunjik collection of the British Museum, Second supplement* (London, 1968), ix. It is also worth noting that the large god list tablet, K 4349 (CT 24 20–46) copied by Kidin-Sin, a Middle Assyrian scribe known from Assur (cf. Pedersen, *Archives*, 1, 41), was discovered in Ashurbanipal's Library.

¹⁸ BM 98745 + 122652 (Angim) and BM 122626 + 122651 + 123380 (Lugale).

¹⁹ *Iraq*, 38, 1976, 93.

²⁰ It is also possible that Marduk-balassu-eriš also copied the Assur pieces KAR 128 and 129, which are similar in content.

²¹ E. Sollberger, *JEOL*, 20, 1968, 50–70. This is not the only example of Mesopotamian pseudepigrapha; cf. a bilingual inscription of Nebuchadnezzar I, found only in Late Assyrian and Late Babylonian copies, edited by W. G. Lambert in *CRAI*, 19, 1971, 432 ff., and *JCS*, 21, 1967, 126 f., now also found in the Sippar Collection (BM 54765 (+) 54810). This text is likely to be a late composition, but see also Brinkman, *PHPCB*, 19.

²² W. G. Lambert, *JCS*, 16, 1962, 59 ff., and J. J. van Dijk, *UVB*, 18, 1962, 43 ff. The latter text ascribes some of the scribes to the Ur III or Old Babylonian Period, although Lambert, art. cit., 76 f., has shown that such dates are too early, and that the scribes probably flourished at the turn of the first millennium B.C. Scribes, particularly from Uruk and Babylon, occasionally traced their own lineage back to these same scribal ancestors, cf. W. G. Lambert, *JCS*, 11, 1957, 1 ff.

²³ I. L. Finkel, *apud* Leichty, *Scientific humanist*, 143 ff.

²⁴ *ibid.*, 148 f. The colophon specifically states that no prior edition of SA.GIG existed.

²⁵ *ibid.*, 150, and KAR 44. The precise role of Esagil-kin-apli remains unclear, since it is unlikely that he could have been personally responsible for the edition of so many works. The likelihood is that Esagil-kin-apli was head of a scribal school which collected and copied numerous texts, and perhaps was ultimately responsible for new text editions. There are, however, no surviving autographs from Esagil-kin-apli himself, but only later references to him in colophons, etc.

²⁶ *JCS*, 16, 1962, 60, 64, 68.

Lambert is likely to be correct in associating these works with Esagil-kin-apli,²⁷ but references to the two epics Lugale and Angim, as well as the series of astronomical omens Enūma Anu Enlil, are particularly suggestive.

It may be more than coincidence that the only two standard literary texts associated with Esagil-kin-apli are Lugale and Angim, the two main Sumerian epics to survive in bilingual form in first millennium libraries.²⁸ This information, combined with the Assur exemplars of Lugale and Angim, offers possible evidence of the independent co-existence of Babylonian and Assyrian editions. More intriguing is the attribution of Enūma Anu Enlil to this same eleventh-century B.C. Borsippa scribe,²⁹ although the text could not have been edited prior to the latest dating of the astronomical observations.³⁰

There are, then, two implications of the Hunger/Pingree edition of MUL.APIN. First, the role of Assur as a scribal school ought not to be ruled out on *a priori* grounds, if the astronomical data can be pushed back to c. 1100 B.C., from a latitude of 36°, since Assur libraries contained editions of literary texts derived from Babylonian scholarship and perhaps from indigenous recensional work. Assur moreover shares nearly the same latitude as Nineveh, and its libraries contained copies of astronomical texts relevant to the astronomical observations of MUL.APIN and Enūma Anu Enlil. Second, the astronomical record in MUL.APIN could theoretically be used in conjunction with intrinsic Assyriological data as impartial evidence for the dating of the canonization of literary texts. It is therefore important for those working on Babylonian astronomy to clarify the statements regarding the dating and origin of MUL.APIN and Enūma Anu Enlil.³¹

²⁷ *ibid.*, 64 f. and 68. All of these compositions are ascribed to the god Ea as 'author', as is the SA.GIG catalogue (note 23 above), and the poultice incantation published by Lambert (*AnSt.*, 30, 1980, 78:16), but these are only to be understood as texts transmitted to scribes through divine inspiration. The question remains regarding the role of the scribe in this process, and whether he is credited with *de facto* authorship of the text, or merely serves as copyist. A clear statement ascribing the compilation of a text occurs in the colophon of the Old Babylonian copies of the collection of Temple Hymns (TCS 3 49: 543–4), which reads: lú-dub ka-kěš-da en-hě-du,-an-na lugal-mu nig ù-tu na-me lú nam-mu-un-ù-tu, 'the editor of the tablet is Enheduanna; my lord, what has been created no one else has created'; cf. W. W. Hallo, *AS*, 20, 1976, 186. Since the process of composing temple hymns was much earlier (already present in Abu Salabikh tablets), the statement presumably refers to the editorial work of collecting and ordering the hymns, although composing individual hymns cannot be ruled out.

²⁸ J. S. Cooper, *Ninurta*, 9. There are, however, other examples of literary texts surviving in bilingual form, such as Enlil and Ninlil and Enki and Ninhursag, but these are much briefer than Lugale and Angim.

²⁹ Enūma Anu Enlil is also associated with Esagil-kin-apli in *KAR* 44 rev. 16.

³⁰ *BPO*, II, 1, suggests that the original corpus of omens of Enūma Anu Enlil Tablet 50 predates – 1000, perhaps back to the Old Babylonian period, but here again the editors Reiner and Pingree have not clarified the state of the text before 1000 B.C.; was there an actual corpus or compilation of astronomical omens known as Enūma Anu Enlil from an earlier period? Or were these simply isolated collections of astronomical omens?

³¹ The author acknowledges the advice and critique of Dr. Irving Finkel and Professor W. G. Lambert, without committing either of them to the conclusions expressed above.